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Twisted Whorls - 2009

Roger W. Elmore
Iowa State University, relmore@iastate.edu

Lori Abendroth
Iowa State University, labend@iastate.edu

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Twisted Whorls - 2009

By Roger Elmore and Lori Abendroth, Department of Agronomy

Pale yellow upper corn leaves abound across Iowa as corn enters the teens of growth stages with some tasseling. These once sun-starved leaves entrapped in the whorl by more mature leaves will wave for a day or more above rapidly growing crop canopies before turning green. Although incidences seem more numerous than in other years, the symptom is not unusual. We reported on it last year occurring at about the same growth stages – tenth to twelfth leaf - and have an article posted on our website that discusses earlier-season situations.

As in other years, twisted whorl symptoms occur in different hybrids and fields at varying degrees of severity. Since its incidence is widespread in Iowa, environmental stress is the probable cause for most cases. Environmental stresses that can cause this are a wide range of temperatures, as experienced earlier this season, and hail or strong winds. Mid-season twisted whorls will follow the same pattern as their early-season counter parts; the majority should unfurl within a week. The resulting pale-yellow leaves will green as they accumulate chlorophyll. If the deformity causes a delay in either growth or development it may reduce yield.

In addition to environmental stress, other factors may cause these symptoms such as an over-the-top application of a fertilizer, herbicide or insecticide. Early-season (V5-V6) twisted whorl symptoms are often, but not always, associated with herbicides. For example, growth regulators, like dicamba or 2,4-D, can cause twisted whorls especially when applied after emergence (See information from Bob Nielsen). Some hybrids are likely more prone to twisted whorl than other hybrids.

Twisted whorls are not a symptom of a plant disease. However, injuries caused as a result of twisted whorls can increase smut infections (see photo in last-year's ICM article). Likewise, twisted whorls are not symptomatic of nutrient deficiencies.

Yellow leaves emerging from a twisted whorl. Ames IA, 29 June 2009. R.W. Elmore.

Leaves will remain 'wrinkled' for the remainder of the growing season even though the yellow leaves will green. Ames IA, 29 June 2009. R.W. Elmore.

Roger Elmore is a professor of agronomy with research and extension responsibilities in corn production. Lori Abendroth is an agronomy specialist with research and extension responsibilities in corn production. Elmore can be contacted by email at relmore@iastate.edu or (515) 294-6655; Abendroth can be contacted by email at labend@iastate.edu or (515) 294-5692.

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